

FIG.1 Biosynthetic pathway from GGPP to astaxanthin in the bacterial system which produces astaxanthin

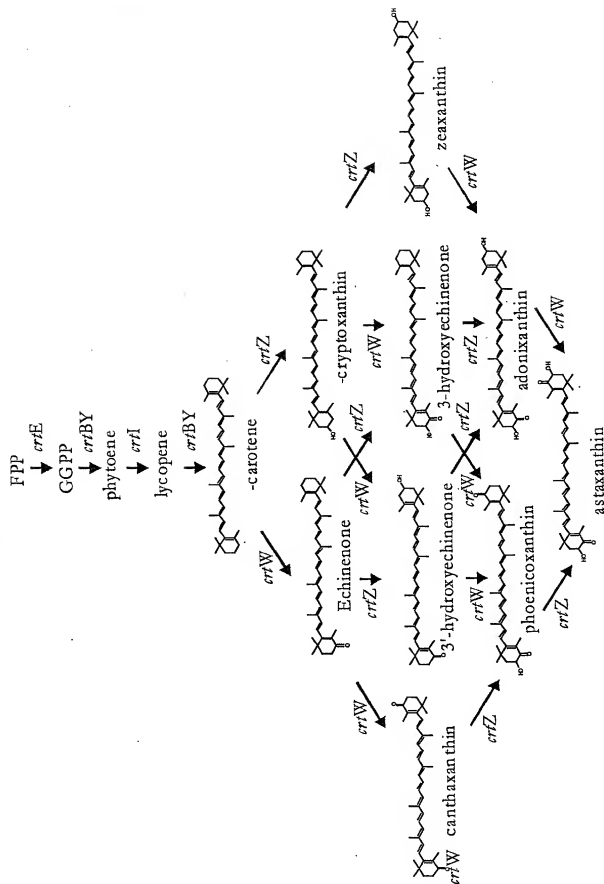
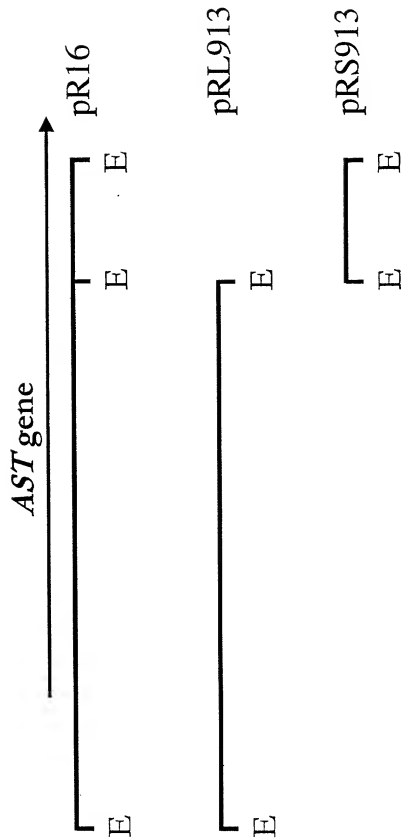
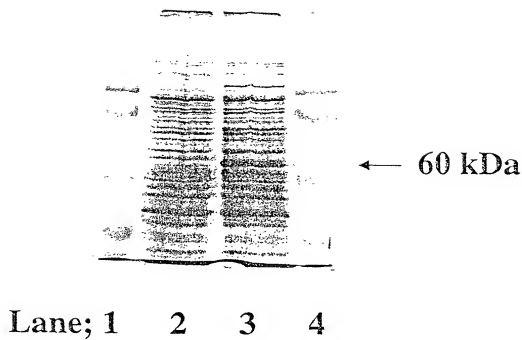


FIG. 2 Restriction map of DNA fragments which were used for functional analysis of *AST* gene from *Phaffia rhodozyma*

Vector backbone of these plasmids was pUC-G418. Restriction enzyme indicated as E is *EcoRI*.





**FIG. 3** Expression of *AST* gene in *E. coli*